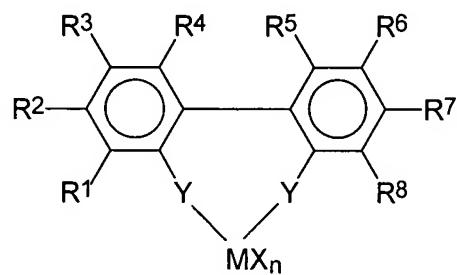


AMENDMENTS TO THE CLAIMS

1. (Original) A process for preparing racemic metallocene biphenoxide complexes by reacting transition metal complexes of the formula (I)



(I),

where the substituents and indices have the following meanings:

M is titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten or an element of transition group III of the Periodic Table and the lanthanides,

X are identical or different and are each fluorine, chlorine, bromine, iodine, hydrogen, C₁-C₁₀-alkyl, C₆-C₁₅-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, -OR⁹ or -NR⁹₂, where R⁹ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl, C₃-C₁₀-cycloalkyl, alkylaryl,

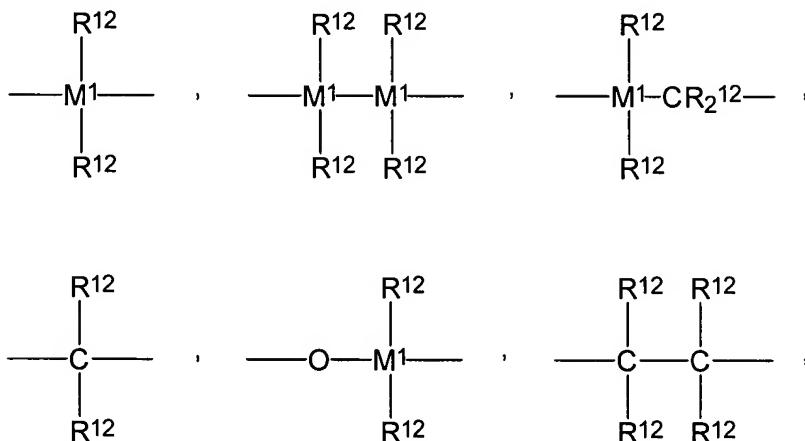
n is an integer from 1 to 4 and corresponds to the valence of M minus 2,

R¹, R², R⁴, R⁵, R⁷, R⁸ are identical or different and are each hydrogen, fluorine, chlorine, bromine, iodine, C₁-C₂₀-alkyl, 3- to 8-membered cycloalkyl which may in turn bear a C₁-C₁₀-alkyl group as substituent, C₆-C₁₅-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part,

arylalkyl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, -OR¹⁰, -SR¹⁰, -N(R¹⁰)₂, -P(R¹⁰)₂ or Si(R¹⁰)₃, where R¹⁰ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl, C₃-C₁₀-cycloalkyl, alkylaryl, where the radicals mentioned may be partially or fully substituted by heteroatoms,

R³, R⁶ are identical or different and are each hydrogen, -OR¹¹, -SR¹¹, -N(R¹¹)₂, -P(R¹¹)₂ or Si(R¹¹)₃, where R¹¹ are identical or different and are each C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl,

Y are identical or different and are each



= BR¹², = AlR¹², -Ge-, -Sn-, -O-, -S-, = SO, = SO₂, = NR¹², = CO, = PR¹² or
= P(O)R¹²,

where

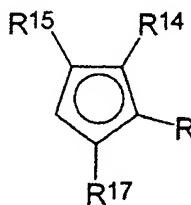
R¹² are identical or different and are each hydrogen, halogen, C₁-C₁₀-alkyl, C₁-C₁₀-fluoroalkyl, C₆-C₁₀-fluoroaryl, C₆-C₁₀-aryl, C₁-C₁₀-alkoxy, C₂-C₁₀-alkenyl, C₇-C₄₀-arylalkyl, C₈-C₄₀-arylalkenyl, C₇-C₄₀-alkylaryl, or two radicals R¹² together with the atoms connecting them form a ring,

M¹ is silicon, germanium or tin,

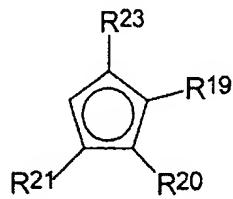
with cyclopentadienyl derivatives of alkali metals or alkaline earth metals and heating the reaction mixture obtained in this way to a temperature in the range from -78 to 250°C.

2. (Currently Amended) A process as claimed in claim 1 comprising the following successive steps:

a) deprotonation of compounds of the formulae (IVa) and (IVb)



and



(IVa)

(IVb)

by means of a suitable deprotonating agent, where

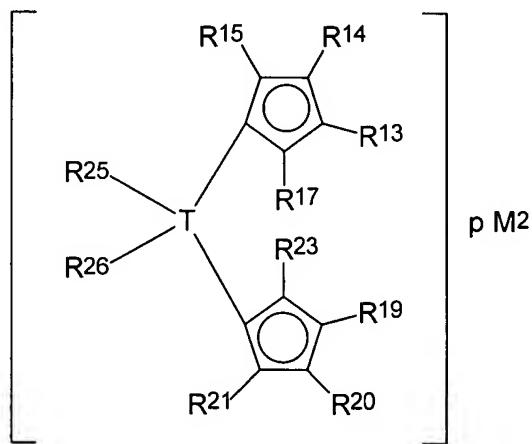
R¹³, R¹⁴, R¹⁵, R¹⁷ are identical or different and are each hydrogen, C₁-C₂₀-alkyl, 5- to 7-membered cycloalkyl which may in turn bear a C₁-C₁₀-alkyl group as substituent, C₆-C₁₅-aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or Si(R¹⁸)₃, where

R¹⁸ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl or C₃-C₁₀-cycloalkyl, and

R¹⁹, R²⁰, R²¹, R²³ are identical or different and are each hydrogen, C₁-C₂₀-alkyl, 5- to 7-membered cycloalkyl which may in turn bear a C₁-C₁₀-alkyl group as substituent, C₆-C₁₅-aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or Si(R²⁴)₃, where

R²⁴ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl or C₃-C₁₀-cycloalkyl,

b) reaction of the deprotonated compounds (IVa) and (IVb) with a compound $[T(R^{25})(R^{26})]_m Hal_2$, where Hal is a halogen substituent such as F, Cl, Br or I, and subsequent repeat deprotonation by means of a suitable deprotonating agent to form a compound of the formula (IIIa)



(III a)

where

M^2 is an alkali metal ion or alkaline earth metal ion,

where

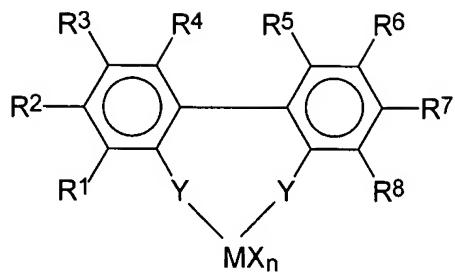
p is 1 when M^2 is an alkaline earth metal ion and is 2 when M^2 is an alkali metal ion, and

T can be identical or different and are each silicon, germanium, tin or carbon,

R^{25} , R^{26} are identical or different and are each hydrogen, C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl or C₆-C₁₅-aryl, and

m is 1, 2, 3 or 4;

c) reaction of the compound of the formula (IIIa) with a transition metal complex of the formula (I)



where the substituents and indices are as defined in claim 1.

3. (Currently Amended) A process as claimed in claim 2, wherein the deprotonating agent is selected from among n-butyllithium, tert-butyllithium, sodium hydride, potassium tert-butoxide, Grignard reagents of magnesium, magnesium compounds, compounds such as, in particular, di-n-butylmagnesium, (n,s)-dibutylmagnesium and other suitable alkaline earth metal alkyl compounds or alkali and alkali metal alkyl compounds.
4. (Currently amended) A process as claimed in ~~claim 2 or 3~~ claim 2 which is carried out without isolation of intermediates after individual process steps.
5. (Currently amended) A process as claimed in ~~any of claims 2 to 4~~ claim 2, wherein, in the compounds of the formula (IIIa), M² is magnesium and R¹⁷ and R²³ are each hydrogen, hydrogen or C₁-C₁₀-alkyl, in particular methyl, ethyl, n-propyl, i-propyl, n-butyl, sec-butyl, tert-butyl, i-butyl, hexyl, or C₆-C₁₀-aryl, in particular phenyl, or trialkylsilyl, in particular trimethylsilyl, and T(R²⁵R²⁶) is bis-C₁-C₁₀-alkylsilyl, bis-C₄-C₁₀-alkylsilyl or bis-C₆-C₁₀-arylsilyl, in particular dimethylsilyl, diphenylsilyl, 1,2-ethanediyl, methylene, 1,2-ethanediyl, or methylene, and the radicals R¹³ to R¹⁵ and R¹⁹ to R²¹ form, in particular, an indenyl-type ring system or a benzindenyl-type ring system.
6. (Currently amended) A process as claimed in ~~any of the preceding claims~~ claim 1, wherein the reaction of the cyclopentadienyl derivatives with compounds of the formula (I) is carried out with addition of free radicals or free radical formers to the reaction mixture.

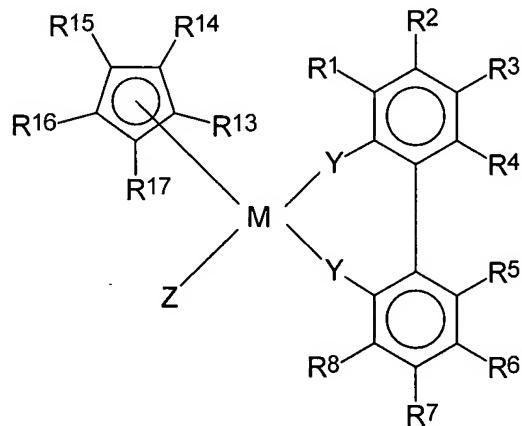
7. (Currently amended) A process as claimed in ~~any of the preceding claims~~ claim 1, wherein R¹ and R⁸ in the formula (I) are bulky substituents.

8. (Currently amended) A process as claimed in ~~any of the preceding claims~~ claim 1, wherein R³ and R⁶ in the formula (I) are each methoxy, ethoxy, isopropoxy, tert-butyloxy, cyclopropoxy or cyclohexyloxy.

9. (Currently amended) A process as claimed in ~~any of the preceding claims~~ claim 1, wherein the bridging units Y in the formula (I) are identical and are each oxygen.

10. (Currently amended) A process as claimed in ~~any of the preceding claims~~ claim 1, wherein cyclopentadienyl derivatives of magnesium or lithium are used.

11. (Original) A racemic metallocene biphenoxide complex of the formula (II)



(II),

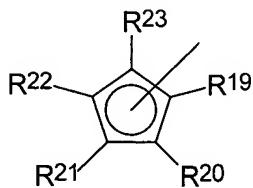
where

Y, M and R¹ to R⁸ are as defined in claim 1, and

R^{13} to R^{17} are identical or different and are each hydrogen, C₁-C₂₀-alkyl, 5-to 7-membered cycloalkyl which may in turn bear a C₁-C₁₀-alkyl group as substituent, C₆-C₁₅-aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or Si(R¹⁸)₃, where

R^{18} are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl or C₃-C₁₀-cycloalkyl, and

Z is



where the radicals

R^{19} to R^{23} are identical or different and are each hydrogen, C₁-C₂₀-alkyl, 5- to 7-membered cycloalkyl which may in turn bear a C₁-C₁₀-alkyl group as substituent, C₆-C₁₅-aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or Si(R²⁴)₃ where
 R^{24} are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl or C₃-C₁₀-cycloalkyl,

or the radicals

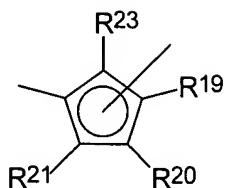
R^{16} and Z together form a $-[T(R^{25})(R^{26})]_m-E-$ group, where

T may be identical or different and are each silicon, germanium, tin or carbon,

R^{25}, R^{26} are each hydrogen, C₁-C₁₀-alkyl, C₃-C₁₀-cycloalkyl or C₆-C₁₅-aryl

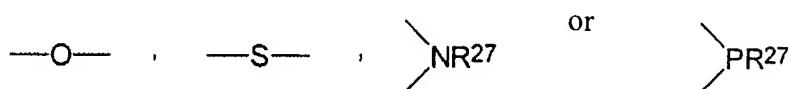
m is 1, 2, 3 or 4, and

E is



or A, where

A is



where R²⁷ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl, C₃-C₁₀-cycloalkyl, alkylaryl or Si(R²⁸)₃

where R²⁸ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl, C₃-C₁₀-cycloalkyl or alkylaryl.

12. (Original) A racemic metallocene biphenoxide complex as claimed in claim 11 in which R¹⁷ and R²³ are not hydrogen when R¹⁶ and Z together form a $-[T(R^{25})(R^{26})]_m-E-$ group.

13. (Canceled)

14. (New) A catalyst which comprises the racemic metallocene as claimed in claim 11.

15. (New) A catalyst which comprises the racemic metallocene as claimed in claim 12.

16. (New) A process as claimed in claim 5 wherein R¹⁷ and R²³ are methyl, ethyl, n-propyl, n-butyl, sec-butyl, tert-butyl, i-butyl, hexyl, phenyl, or trimethylsilyl and T(R²⁵R²⁶) is dimethylsilyl, diphenylsilyl, 1,2-ethanediyl or methylene.

17. (New) A process as claimed in claim 16 wherein the reaction of the cyclopentadienyl derivatives with compounds of the formula (I) is carried out with addition of free radicals or free radical formers to the reaction mixture, and wherein R¹ and R⁸ in the formula (I) are bulky substituents, R³ and R⁶ in the formula (I) are each methoxy, ethoxy, isopropoxy, tert-butyloxy, cyclopropoxy or cyclohexyloxy, the bridging units Y in the formula (I) are identical and are each oxygen, and cyclopentadienyl derivatives of magnesium or lithium are used.